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ABSTRACT

Decision-oriented inquiries emanate from a specific need for information and are conducted under a number of constraints. Conclusion-oriented research originates with the researcher and can be pursued in ways decided on by the researcher. Two examples of decision-oriented evaluation studies conducted by school districts and the relationships between these studies and conclusion-oriented work are given to illustrate the kinds of contributions that conclusion-oriented investigations can make to program evaluations conducted at the local level. The products of conclusion-oriented work can best be incorporated into school-based evaluation efforts through better communication by conclusion-oriented researchers and some collaborative relationships between the two groups of researchers. The National Institute of Education (NIE) can assist in improving the exchange of information by studies of the communication problem, and building communication networks. (MLF)

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NEED FOR RESEARCH IN EDUCATION

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The topic that we have been asked to address is the need for basic research in education. Basic research is generally regarded as research directed toward the solution of discipline-derived problems, with contribution to theory as the primary objective. It is conducted by individuals who are free for the most part to ask their own questions, select their own methods of inquiry, and direct their work as they see fit. Basic research is usually contrasted with applied research, the latter being designed to be more immediately applicable to real world problems.

Rather than restricting our discussion to basic research, we would like to focus on what Cronbach and Suppes (1969) have termed conclusion-oriented inquiry. They distinguish between this type of inquiry and research that they call decision-oriented inquiry. In their view, the main distinctions between decision-oriented inquiry, under which most research conducted at the school district level can be categorized, and conclusion-oriented inquiry lie in the originator of the work and the constraints under which it is carried out. Decision-oriented inquiries emanate from a specific need for information that is relevant to a particular educational decision and are conducted under a number of constraints involving time

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resources, political pressures, and so on. Conclusion-oriented research originates with the researcher and can be pursued in ways decided upon by that researcher. It may or may not be heavily guided by theory.

Our position is that conclusion-oriented work is essential to the improvement of educational practice. One important way in which it can contribute to better practice is through contributions to decision-oriented research efforts at the local level. In these brief remarks, we will attempt to illustrate these contributions and propose some ways in which the products of conclusion-oriented work can best be incorporated into district-based efforts.

We will draw our examples from the area of evaluation. By "evaluation," we mean research aimed at furnishing information about the effectiveness of particular educational programs. We chose this area for three reasons. First, it seems to be the type of research conducted most frequently by the members of Division H, at least it tends to be what is most often reported on here at AERA meetings. Second, evaluation is currently beset by serious theoretical and practical problems. Thus, much additional work needs to be done by conclusion-oriented as well as decision-oriented researchers. The third reason for considering evaluation is that it is an area we know something about.

Let's begin by examining two examples of the kinds of evaluation studies conducted by school districts and the relationships between these studies and conclusion-oriented work. The first example is a study by the Department of Planning and Evaluation of the Dade County (Florida)

Public Schools. This study, which was featured in the new "R&D in Progress in Schools" section of last October's Educational Researcher, was designed to assess systems approaches to reading and mathematics instruction in grades 2 through 6. The study examined program operations, pupil progress, cost, and teacher attitudes. Data were gathered through on-site observations of classrooms, questionnaires concerning salient program features, county-wide testing programs in which both norm- and criterion-referenced tests were administered, and a teacher attitude survey.

The second example we would like to consider is an evaluation of the ESAA Multiethnic Education Program conducted by the Department of Research, Evaluation, and Information Systems of the Dallas Independent School District. The purpose of this program is to provide high-school students with increased knowledge concerning a range of peoples and cultures. Information on program implementation, student achievement, and student attitudes toward themselves and toward school was collected through classroom observation, criterion-referenced testing, and attitude surveys.

These two studies seem to be somewhat representative of the kinds of district-based evaluation studies currently being undertaken. In addition, they illustrate a few of the past contributions of conclusion-oriented work. The general tendency has been to view these contributions as "givens," and not recognize them as the outcomes of conclusion-oriented research.

One such outcome is the distinction between criterion-referenced and norm-referenced tests. The Dade County and Dallas researchers made extensive use of the measurement theory and techniques associated with criterion-referenced testing. In their use of norm-referenced tests, they dealt with additional concepts derived from measurement research, such as grade-equivalents and stanines. The application of statistical science was also extensive in both studies. As examples, the researchers used techniques for taking pre-treatment student characteristics into account, for sampling and generalizing from sample to population, and for summarizing data in a form useful in estimating program impact on student achievement. Examples such as these serve as reminders that district-based studies are quite dependent upon conclusion-oriented research for the concepts, paradigms, instruments, and methodologies they require.

The Dade County and Dallas studies also point out some areas in evaluation that can be improved through conclusion-oriented work being conducted at the present time. These areas are: (1) the measurement of outcomes, (2) the measurement of implementation, and (3) the sorting out of program effects on outcomes. We will briefly describe some current efforts in each of these areas.

In the area of outcomes measurement, there are at least three important questions that need to be answered: (1) How should student achievement be assessed? (2) How can other outcomes of schooling be measured? and (3) How can the value of student outcomes be established? At the present time, numerous test batteries and criterion-based tests are available to measure achievement. There is, though, considerable debate

regarding which measures to use in program evaluation. Although it is desirable to measure directly what has been taught and learned in a specific educational setting, program-specific measures make cross-program contrasts difficult if not impossible. It is generally more convenient and psychometrically more valid to use standardized norm-referenced tests that have been designed to assess a sampling of the content of a number of programs rather than content that is specific to one program. The disadvantage of standardized tests is that they not only measure what is taught by a specific program, but also reflect what is taught and learned in the rest of the school environment and outside of school. In the Dade County evaluation, student achievement was measured by both standardized and criterion-referenced tests. To determine whether this solution or some other solution is most appropriate is one of the current aims of a great deal of conclusion-oriented research being conducted around the country.

Research is also being carried out to find better ways of measuring noncognitive outcomes of schooling such as self-esteem. An attempt to measure this outcome was made in the Dallas evaluation but no differences in student attitudes toward themselves were found. The school district researchers concluded that either no differences existed or it was impossible to detect them with the instrument used. Ongoing conclusion-oriented work related to this problem includes investigations aimed at determining whether or not the trait approach, which is the basis for measuring student ability, is really a valid approach to the assessment of other kinds of personality characteristics. Ability traits have the property of

being relatively stable, highly consistent attributes that exert widely generalized effects on behavior. In addition, there is evidence to support the notion that ability traits can be affected by the kinds of learning that takes place in schools. However, when one turns from the intellective features of personality to more broader concerns such as self-esteem, interests, and attitudes, which many feel school should also influence, it is not clear whether the trait approach is still appropriate. This area is undergoing intensive study by a number of researchers, particularly in the area of social psychology.

A third aspect of outcomes measurement that is receiving increased attention concerns the value of particular student outcomes. People will not view an educational program as effective until there is evidence that it will have a positive effect on outcomes that they value. The most important school outcomes are usually those that people believe affect, either directly or indirectly, success and satisfaction as an adult. Achievement is generally regarded as a valued outcome. That is, people believe that higher achievement in school leads to a better career, which leads to a more satisfying life. This relationship, however, is clearly in need of further clarification. Establishing the value of noncognitive outcomes is an even more difficult task. Conclusion-oriented work in such fields as social psychology and anthropology is expected to make some important contributions to this aspect of the problem of measuring outcomes.

A second area of evaluation that can benefit from ongoing conclusion-oriented research is the measurement of program implementation. In both the Dade County and Dallas evaluations, there were attempts to

measure how a program was implemented at the classroom level, but these efforts dealt very superficially with the implementation problem. It has been recognized for some time that variation in implementation must be taken into account in evaluation studies. No educational program is used in the same way by different teachers. This variation can be so great that a particular program may be quite superior to others but may lose its potential impact because it was poorly implemented. It is important that improved procedures be developed for identifying and measuring teacher effects and for sorting out these effects from the effects of the program that teachers are implementing. This problem is currently receiving much attention, especially from researchers in the field of instructional psychology.

A third problem area in evaluation concerns design and analysis procedures for non-experimental, longitudinal studies. As the result of the very important work of Cronbach, Glass, and others, we are now seeing more clearly the trade-off between internal and external validity and the critical importance of generalizability. Even district-based studies, if they are to have significance in local decision making, must be generalizable beyond the specific instances that were observed. To ensure that results are generalizable, there is a requirement for statistical methodology more advanced than that needed in studies relying exclusively on simple experimental designs. Much effort on the part of conclusion-oriented researchers is presently being directed toward the development of such methodology.

Now that we have illustrated the kinds of contributions that conclusion-oriented investigations can make to program evaluations conducted at the local level, we would like to set forth some notions on how the products of conclusion-oriented work can best be incorporated into school-based evaluation efforts. One thing that conclusion-oriented researchers in areas related to evaluation should attempt to do is better communicate their activities to school researchers. Some progress has been made in this direction, but there is still a vast amount of work to be done. In our view, the communication of research results could be facilitated to some extent by a change in the incentive systems of universities, R&D organizations, and other places where conclusion-oriented work is carried out. At present, there is generally more concern about a researcher communicating to his/her colleagues than to school researchers. Until this incentive system changes and an individual is rewarded for better informing a wider audience of his/her work, we feel that the communication of research findings to school evaluators will not be vastly improved. How to change incentive systems at universities and R&D organizations is not clear, but it is an area that should be explored by individual institutions as well as by the sponsors of educational R&D at these institutions (NIE, for example).

The burden of ensuring that research results are available for use in local evaluation activities should not, however, rest entirely with the individual conducting the research. If the findings of conclusion-oriented work are not readily available, then the school researcher should attempt to seek them out through personal visits, mail or telephone requests, participation in workshops, and so on. A related point concerning the role of school researchers is that they, too, should attempt to communicate their

work to a wider audience. Frequently, an evaluation report issued by a school district is never seen by anyone outside that district. If local reports were more generally available, conclusion-oriented researchers would have a better idea of who in the school community might be interested in their work. As a result, at least one problem encountered in attempts to communicate research findings--i.e., identification of an appropriate school audience--would be lessened. Increased distribution of locally produced reports would also help to increase understanding on the part of conclusion-oriented researchers of the kinds of problems faced by school evaluators. In some cases, these problems might suggest areas of work that could be undertaken at universities and R&D organizations. In addition, wider circulation of local reports would provide an opportunity for both school researchers and conclusion-oriented researchers to critique work done at the local level. Local reports would then have the benefit of the same kinds of critical review that reports authored by conclusion-oriented researchers have received for years.

At one time, it was thought that so-called knowledge linkers, the ERIC system for example, would solve some of the problems of information exchange between conclusion-oriented researchers and school researchers. Such linking systems have not been very successful and, in our opinion, probably won't be until the individuals and organizations being linked become more aware of and sensitive to each other's work. To achieve increased awareness and sensitivity, the parties involved must, at some point, interact directly rather than through an information service or even through an individual who serves as a translator of

R&D knowledge. A current example of the kind of direct interaction that we are proposing can be found in NIE's R&D Utilization Program. In this program, researchers at universities and R&D agencies are working with school personnel to identify, select, and implement solutions to high priority educational problems in several states. We feel that some collaborative relationships of this type are also critical in the area of program evaluation, if the results of conclusion-oriented work are to be successfully incorporated into local research efforts.

We have touched on the role of conclusion-oriented researchers, school researchers, and linking systems in improving communication. Now we would like to discuss the role of NIE. NIE cannot be expected to provide direct support for decision-oriented research in 17,000+ school districts. What it can do is assist in improving the exchange of information between researchers in these districts and researchers in universities and R&D organizations. It can do so through at least two kinds of activities: (1) studies of the problem of communication, and (2) the building of communication networks. Both kinds of activities are currently being conducted under NIE sponsorship. Although we fully agree that both are essential, two cautions seem to be in order. First, NIE should take steps to ensure that each type of activity is not isolated from the other. Research on the problem of information exchange should both contribute to and draw from actual exchange efforts. Second, NIE should focus greater attention on the evaluation of its communication networks. Large-scale efforts should be mounted only after there is ample evidence from pilot studies to suggest that expanded networks will significantly improve the exchange of information among researchers in education.

Reference

Cronbach, L. J., & Suppes, P. (Eds.). Research for tomorrow's schools. New York: MacMillan, 1969.